

App. No. 10/089,315
Amend. dated July 26, 2004
Resp. to Office Action of Jan. 26, 2004

Amendment to the Specification

Please replace the paragraph beginning on line 5, page 1, of the specification with the following:

--This application claims the benefit of the Provisional Application 60/201,306, which is relied on and incorporated herein by reference. This application is a national stage application of PCT/US01/13924 filed May 1, 2001.--

SYSTEM FOR PROTECTION OF SUBMERGED MARINE SURFACES

Reference to a Related Application

5 This application claims the benefit of the Provisional Application 60/201,306 which is relied on and incorporated herein by reference.

Introduction and Background

10 The invention is a system comprised of metallized coatings and thermal spray procedures that produces a unique protective coating. In particular, the invention consists of preparing and applying zinc and zinc-based alloys. These materials are thermal sprayed with unique metallizing processes and procedures onto surfaces of submerged marine structures. This invention differs from other metallized coatings in that it performs the
15 function of bio-fouling protection and cathodic protection.

The practice of coating steel and concrete with thermally sprayed metal coatings for corrosion protection has been accepted for many years for use on offshore platforms, oil storage tanks, gas transmission facilities, bridges, rail cars, locks and dams, bulkheads, ships, barges, pulp and paper mills, and petrochemical plants. Thermal spray coatings are often called metallized coatings. Many metals and alloys exist; aluminum and zinc are the most widely used metals for corrosion control. Aluminum metallized coatings (AMC) and zinc metallized coatings (ZMC) provide long-term corrosion protection for greater than 30 years. Compared to paint, both AMC and ZMC have superior corrosion
25 and abrasion resistance.

Aluminum and zinc are anodic to most metals and protect these more noble substrates in electrolytic environments. Aluminum is more noble than zinc; therefore, it corrodes less rapidly than zinc. As a result, aluminum metallized coatings are more commonly used
30 for corrosion protection in marine environments, rather than zinc metallized coatings. This is especially the case for immersion applications. Since the aluminum metallized